

WHAT IS CLAIMED IS:

1. A cooling fin structure, comprising:

a thermally conductive sheet bent to form a heat radiation part and a welding part, the welding part being formed with a vacant region, and the thermally
5 conductive sheet being welded to a substrate through the welding part.

2. The cooling fin structure of claim 1, wherein the vacant region is defined by notches formed on an edge of the welding part.

3. The cooling fin structure of claim 1, wherein the welding part has a serrate edge.

10 4. The cooling fin structure of claim 1, wherein the vacant region is defined by openings formed on the welding part of the thermally conductive sheet.

5. The cooling fin structure of claim 4, wherein the openings are in a circular shape or a polygon shape.

15 6. The cooling fin structure of claim 1, wherein the vacant region is defined by a slot formed on the welding part of the thermally conductive sheet.

7. The cooling fin structure of claim 1, wherein the material of the thermally conductive sheet is selected from the group consisting of aluminum, copper, aluminum alloy, copper alloy, and their compounds.

8. The cooling fin structure of claim 1, wherein the material of the substrate is

selected from the group consisting of aluminum, copper, aluminum alloy, copper alloy, and their compounds.

9. The cooling fin structure of claim 1, wherein the thermally conductive sheet is bent through sheet metal work.

5 10. The cooling fin structure of claim 1, wherein the thermally conductive sheet is bent to form an L-shape cross-section.

11. A fin assembly, comprising:

a substrate; and

10 a plurality of cooling fins, each of which is bent to form a heat radiation part and a welding part, the welding part being welded on a surface of the substrate to connect the cooling fins to the substrate;

wherein the welding part is formed with a vacant region such that part area of the surface of the substrate is not covered by the cooling fins.

12. The cooling fin structure of claim 11, wherein the cooling fin is bent through
15 sheet metal work.

13. The cooling fin structure of claim 11, wherein the cooling fin is bent to form an L-shape cross-section.

14. The cooling fin structure of claim 11, wherein the vacant region is defined by notches formed on an edge of the welding part.

15. The cooling fin structure of claim 11, wherein the vacant region is defined by openings formed on the welding part.

16. The cooling fin structure of claim 15, wherein the openings are in a circular shape or a polygon shape.

5 17. The cooling fin structure of claim 11, wherein the vacant region is defined by a slot formed on the welding part.

18. The cooling fin structure of claim 11, wherein the thermally conductive material is selected from the group consisting of aluminum, copper, aluminum alloy, copper alloy, and their compounds.

10 19. The cooling fin structure of claim 11, wherein the material of the cooling fin is selected from the group consisting of aluminum, copper, aluminum alloy, copper alloy, and their compounds.